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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,813	04/05/2005	Toshio Narita	042393	6606
38834	7590	04/27/2006		
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036			EXAMINER WONG, EDNA	
			ART UNIT 1753	PAPER NUMBER

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/501,813

Applicant(s)

NARITA ET AL.

Examiner

Edna Wong

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                                                    |                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                               | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>July 19, 2004</u> . | 6) <input type="checkbox"/> Other: ____.                                                |

***Specification***

The disclosure is objected to because of the following informalities:

page 5, lines 19-20, it is unclear what is meant by "in the method the set forth".

page 6, line 8, it is unclear what is meant by "covering cover".

Appropriate correction is required.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

Claims **6 and 7** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claim 6**

lines 2-6, it is unclear what the "at least one ion selected from the group consisting of potassium, rubidium, cesium, calcium, strontium and barium ions, wherein the total concentration of said at least one of lithium ion and sodium ion in said

electroplating bath is greater than the total concentration of said at least one ion selected from the group consisting of potassium, rubidium, cesium, calcium, strontium and barium ions" is further limiting.

If it is the electroplating bath recited in claim 1, line 3, and claim 3, line 3, then the word -- further -- should be inserted after the word "bath" in claim 6, line 2.

If it is the aqueous solution recited in claim 1, line 3, and claim 3, line 3, then the words "electroplating bath contains" should be amended to the words -- aqueous solution further includes --.

#### Claim 7

lines 2-3, it is unclear what "a sulfate ion in a concentration of 0.0001 to 5.0 mol/L, and a chloride ion in a concentration of 0.0001 to 5.0 mol/L" is further limiting.

If it is the electroplating bath recited in claim 1, line 3, and claim 3, line 3, then the word -- further -- should be inserted after the word "bath" in claim 7, line 2.

If it is the aqueous solution recited in claim 1, line 3, and claim 3, line 3, then the words "electroplating bath contains" should be amended to the words -- aqueous solution further includes --.

#### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory

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obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-7 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 6,979,392 B2 (Narita et al.). Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the referenced patent and would be covered by the referenced patent since the referenced patent and the instant application are claiming common subject matter, as follows:

A method for forming a Re alloy film comprising performing an electroplating process using an electroplating bath which contains an aqueous solution including:

- (a) a perrhenate ion; and
- (b) at least one ion selected from the group consisting of nickel, iron, cobalt and chromium (III) ions;

wherein said electroplating bath has a has a pH of 0 to 8, and a temperature of

10 to 80°C.

The independent claims of the instant application recites similar limitations, either alone or in combination with their dependent claims, as that of the claims of the patent wherein the claims of the instant application are encompassed by the claims of the patent. Therefore, the claims would have been obvious variants over each other.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

I. Claims **1-2 and 6-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 09-302496** ('496).

JP '496 teaches a method for forming a high-Re-content alloy film, said method comprising:

performing an electroplating process (= galvanizing) [page 3, [0022] to [0024]] using an electroplating bath (= plating bath) [page 2, [0013]] which contains an aqueous solution including:

(i) a perrhenate ion in a concentration of 0.1 to 8.0 mol/L (= 0.01 to 0.6 mol/l of rhenium acid ions) [page 2, [0013]];

(ii) at least one ion selected from the group consisting of

nickel, iron, cobalt and chromium (III) ion, in a total concentration of 0.005 to 2.0 mol/L (= 0.005 to 0.04 mol/l of Ni ions and/or Co ions) page 2, [0013]];

(iii) at least one of a Li ion and a Na ion, in a total concentration of 0.0001 to 5.0 mol/L (= from 0.12 mol/l of sodium molybdate and sodium hydroxide) [page 3, [0030]]; and

(iv) at least one organic acid selected from the group consisting of carboxylic acid, hydroxycarboxylic acid and amino acid, in a concentration of greater than 5.0 to 15.0 equivalents to the concentration of all of said metal ions (= 0.1 to 3Eq of an organic acid) [pages 2-3 [0018] to [0019]; and claims 4-8], wherein said electroplating bath has a pH of 0 to 8, and a temperature of 10 to 80°C (page 3, [0022]).

The remainder being at least one selected from the group consisting of Ni, Co, Fe, Mn, Cr, Mo, W, Nb, Ta, Hf, Si, Al, Ti, Mg, Pt, Ir, Rh, Au, Ag, P, B, C, Y and Ce, and inevitable impurities (= nickel, cobalt, tungsten and molybdenum) [page 2, [0013]].

The electroplating bath contains at least one ion selected from the group consisting of potassium, rubidium, cesium, calcium, strontium and barium ions (= 0.15 mol/l of rhenium acid potassium) [page 3, [0030]].

The electroplating bath contains a chloride ion in a concentration of 0.0001 to 5.0 mol/L (= 0.38 mol/l of chromium chloride) [page 3, [0030]].

The method of JP '496 differs from the instant invention because JP '496 does

not disclose the following:

a. Wherein the high-Re-content alloy film contains Re at 98% or more by atomic composition, as recited in claim 1.

b. Wherein said alloy film to be formed has a composition consisting of 98% or more, by atomic composition, of Re, as recited in claim 2.

JP '496 teaches 0.01 to 0.6 mol/l of rhenium acid ion (page 2, [0013]).

JP '496 teaches 3 to 50% rhenium (page 2, [0014]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the alloy film described by JP '496 with wherein the high-Re-content alloy film contains Re at 98% or more by atomic composition; and wherein said alloy film to be formed has a composition consisting of 98% or more, by atomic composition, of Re, because changes concentration is not a patentable modification; however, such changes may impart patentability to a process if the ranges claimed produce new and unexpected results which are different in kind and not merely in degree from results of the prior art, such ranges are termed "critical" ranges and Applicant has the burden of proving such criticality; even though Applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within capabilities of one skilled in the art; more particularly, where general conditions of the claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation (MPEP § 2144.05).



c.       Wherein the total concentration of said at least one of lithium ion and sodium ion in said electroplating bath is greater than the total concentration of said at least one ion selected from the group consisting of potassium, rubidium, cesium, calcium, strontium and barium ions, as recited in claim 6.

JP '496 teaches 0.01 to 0.6 mol/l of rhenium acid ions (page 2, [0013]) and 0.15 mol/l of rhenium acid potassium (page 3, [0030]).

JP '496 teaches 0.12 mol/l of sodium molybdate and sodium hydroxide (page 3, [0030]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the concentrations described by JP '496 with wherein the total concentration of said at least one of lithium ion and sodium ion in said electroplating bath is greater than the total concentration of said at least one ion selected from the group consisting of potassium, rubidium, cesium, calcium, strontium and barium ions because the balance between the organic acid and metallic ions would have controlled the stability in the plating bath of each metallic complex formed, which contributes to the good precipitating balance of each metal as taught by JP '496 (abstract).

d.       Wherein said electroplating bath contains a sulfate ion in a concentration of 0.0001 to 5.0 mol/L, as recited in claim 7.

JP '496 teaches that sulfuric acid adjusted the plating liquid to pH 3.2 (page 3,

[0030]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the electroplating bath described by JP '496 with wherein said electroplating bath contains a sulfate ion in a concentration of 0.0001 to 5.0 mol/L because the sulfate ion concentration is a result-effective variable and one skilled in the art has the skill to calculate the sulfate ion concentration that would have determined the success of the desired reaction to occur, i.e., pH, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(II)(B).

**II.** Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 09-302496** ('496).

JP '496 teaches a method for forming a high-Re-content alloy film, said method comprising:

performing an electroplating process (= galvanizing) [page 3, [0022] to [0024]] using an electroplating bath (= plating bath) [page 2, [0013]] which contains an aqueous solution including:

(i) a perrhenate ion in a concentration of 0.1 to 8.0 mol/L (= 0.01 to 0.6 mol/l of rhenium acid ions) [page 2, [0013]];

(ii) at least one ion selected from the group consisting of nickel, iron and cobalt ions, in a total concentration of 0.005 to 2.0 mol/L (= 0.005 to 0.04 mol/l of Ni ions and/or Co ions) [page 2, [0013]];

(iii) a Cr (III) ion in a concentration of 0.1 to 4.0 mol/L (0.01-0.8 mol/l Cr(III) ions); and

(iv) at least one of a lithium ion and a sodium ion, in a total concentration of 0.0001 to 5.0 mol/L (= from 0.12 mol/l of sodium molybdate and sodium hydroxide) [page 3, [0030]],

wherein said electroplating bath has a pH of 0 to 8, and a temperature of 10 to 80°C (page 3, [0022]).

The remainder being at least one of Ni, Fe and Co (= nickel, cobalt, tungsten and molybdenum) [page 2, [0013]].

The electroplating bath contains an organic acid in a concentration of 0.1 to 5.0 equivalents to the concentration of all of said metal ions (= 0.1 to 3Eq of an organic acid) [pages 2-3 [0018] to [0019]; and claims 4-8].

The electroplating bath contains at least one ion selected from the group consisting of potassium, rubidium, cesium, calcium, strontium and barium ions (= 0.15 mol/l of rhenium acid potassium) [page 3, [0030]].

The electroplating bath contains a chloride ion in a concentration of 0.0001 to 5.0 mol/L (= 0.38 mol/l of chromium chloride) [page 3, [0030]].

The method of JP '496 differs from the instant invention because JP '496 does not disclose the following:

a. Wherein the high-Re-content alloy film which contains Re in the range of

65 to less than 98% by atomic composition, as recited in claim 3.

b. Wherein said alloy film to be formed has a composition consisting of 65 to less than 98%, by atomic composition, of Re, as recited in claim 4.

JP '496 teaches 0.01 to 0.6 mol/l of rhenium acid ion (page 2, [0013]).

JP '496 teaches 3 to 50% rhenium (page 2, [0014]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the alloy film described by JP '496 with wherein the high-Re-content alloy film which contains Re in the range of 65 to less than 98% by atomic composition; and wherein said alloy film to be formed has a composition consisting of 65 to less than 98%, by atomic composition, of Re, because changes concentration is not a patentable modification; however, such changes may impart patentability to a process if the ranges claimed produce new and unexpected results which are different in kind and not merely in degree from results of the prior art, such ranges are termed "critical" ranges and Applicant has the burden of proving such criticality; even though Applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within capabilities of one skilled in the art; more particularly, where general conditions of the claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation (MPEP § 2144.05).

c. Wherein the total concentration of said at least one of lithium ion and

sodium ion in said electroplating bath is greater than the total concentration of said at least one ion selected from the group consisting of potassium, rubidium, cesium, calcium, strontium and barium ions, as recited in claim 6.

JP '496 teaches 0.01 to 0.6 mol/l of rhenium acid ions (page 2, [0013]) and 0.15 mol/l of rhenium acid potassium (page 3, [0030]).

JP '496 teaches 0.12 mol/l of sodium molybdate and sodium hydroxide (page 3, [0030]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the concentrations described by JP '496 with wherein the total concentration of said at least one of lithium ion and sodium ion in said electroplating bath is greater than the total concentration of said at least one ion selected from the group consisting of potassium, rubidium, cesium, calcium, strontium and barium ions because the balance between the organic acid and metallic ions would have controlled the stability in the plating bath of each metallic complex formed, which contributes to the good precipitating balance of each metal as taught by JP '496 (abstract).

d. Wherein said electroplating bath contains a sulfate ion in a concentration of 0.0001 to 5.0 mol/L, as recited in claim 7.

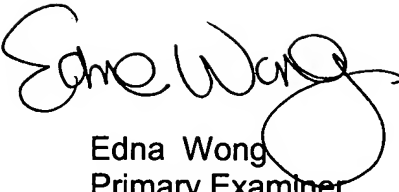
JP '496 teaches that sulfuric acid adjusted the plating liquid to pH 3.2 (page 3, [0030]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the electroplating bath described by JP '496 with wherein said electroplating bath contains a sulfate ion in a concentration of 0.0001 to 5.0 mol/L because the sulfate ion concentration is a result-effective variable and one skilled in the art has the skill to calculate the sulfate ion concentration that would have determined the success of the desired reaction to occur, i.e., pH, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(II)(B).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Edna Wong  
Primary Examiner  
Art Unit 1753

EW  
April 22, 2006